

AMENDMENTS TO THE CLAIMS

1 - 25. **(Canceled)**

26. **(New):** A method of automatically adjusting a level of trace data collection, comprising:
monitoring program activity occurring during execution of a computer program;
collecting trace data representative of the program activity;
writing the trace data to one or more trace records, each of the one or more trace records including a trace level associated therewith, the trace level indicating a severity of the program activity;

storing the one or more trace records in a trace history buffer located in volatile memory, such that trace records are written to the trace history buffer until the trace history buffer is full, and older trace records are overwritten by newer trace records when the trace history buffer is full, the trace history buffer thereby containing a history of recent trace records;

comparing, for each trace record stored in the trace history buffer, the trace level to a predetermined threshold value, and writing the trace record to a log file located in persistent storage as a logged trace record if the trace level is greater than the predetermined threshold value;

writing the trace history buffer to the log file if a trap value specific to the program activity is detected within the logged trace record;

writing the trace history buffer to the log file if the trap value specific to the program activity fails to be detected, and if the trace level associated with the logged trace record is greater than a predetermined trace history level;

upon writing the trace history buffer to the log file, resizing the trace history buffer if is determined the trace history buffer is in need of resizing; and

resetting and clearing the trace history buffer such that storing of trace records may continue.

27. **(New):** The method of claim 26 wherein the trace level is a numeric value.

28. **(New):** The method of claim 26 wherein the trace history buffer is of a configurable size.
29. **(New):** The method of claim 26 wherein the predetermined threshold value is configurable.
30. **(New):** The method of claim 26 wherein the predetermined trace history level is configurable.
31. **(New):** The method of claim 26 wherein the predetermined trace history level indicates a level of severity that causes the trace history buffer to be written to the log file.
32. **(New):** The method of claim 26 wherein the trap value comprises a condition code unique to an event occurring within the program.
33. **(New):** The method of claim 26 wherein the trap value comprises a trigger received from a hardware signal.
34. **(New):** The method of claim 26 wherein resizing the trace history buffer further comprises clearing the trace history buffer.
35. **(New):** The method of claim 26 wherein the log file and the trace history buffer reside on different computer systems that communicate over a network.
36. **(New):** A computer program product comprising a computer useable medium having a computer readable program, wherein the computer readable program when executed on a computer causes the computer to:
- monitor program activity occurring during execution of a computer program;
 - collect trace data representative of the program activity;
 - write the trace data to one or more trace records, each of the one or more trace records including a trace level associated therewith, the trace level indicating a severity of the program activity;

store the one or more trace records in a trace history buffer located in volatile memory, such that trace records are written to the trace history buffer until the trace history buffer is full, and older trace records are overwritten by newer trace records when the trace history buffer is full, the trace history buffer thereby containing a history of recent trace records;

compare, for each trace record stored in the trace history buffer, the trace level to a predetermined threshold value, and writing the trace record to a log file located in persistent storage as a logged trace record if the trace level is greater than the predetermined threshold value;

write the trace history buffer to the log file if a trap value specific to the program activity is detected within the logged trace record;

write the trace history buffer to the log file if the trap value specific to the program activity fails to be detected, and if the trace level associated with the logged trace record is greater than a predetermined trace history level;

upon writing the trace history buffer to the log file, resize the trace history buffer if is determined the trace history buffer is in need of resizing; and

reset and clear the trace history buffer such that storing of trace records may continue.

37. **(New):** The computer program product of claim 36 wherein the trace level is numeric.
38. **(New):** The computer program product of claim 36 wherein the trace history buffer is of a configurable size.
39. **(New):** The computer program product of claim 36 wherein the predetermined threshold value is configurable.
40. **(New):** The computer program product of claim 36 wherein the predetermined trace history level is configurable.
41. **(New):** The computer program product of claim 36 wherein the predetermined trace history level indicates a level of severity that causes the trace history buffer to be written to the log file.

42. **(New):** The computer program product of claim 36 wherein the trap value comprises a condition code unique to an event occurring within the program.
43. **(New):** The computer program product of claim 36 wherein the trap value comprises a trigger received from a hardware signal.
44. **(New):** The computer program product of claim 36 wherein resizing the trace history buffer further comprises clearing the trace history buffer.